Farmer Greedy

**Time Limit: 30000/15000 MS (Java/Others)    Memory Limit: 65536/32768 K (Java/Others)**

**Description**

Farmer Greedy is going to buy some houses for his farm. He has money only to buy three houses. The three houses can from a triangle area, which he can own as his farm.

There are many houses he can choose to buy, and there are many goldstones. They are points in a 2-dimentional plane. No three points are collinear. Farmer Greedy likes odd numbers. Now Farmer Greedy wonders how many farms he can choose to have odd goldstones in it.

**Input**

There are multiple test cases. In each case, the first line gives two integers N, M. In the next N lines, each line gives two integers (X, Y) indicating the coordinates of one house. In the next M lines, each line gives two integers (X, Y) indicating the coordinates of one goldstone.

**Technical Specification**

3 <= N <= 100

0 <= M <= 1000

|X|, |Y| <= 100000

**Output**

For each case, print in one line containing the case number (starting with 1) and the number of farms Farmer Greedy can choose to have odd goldstones in it.

**Sample Input**

4 4

-10 0

10 0

0 10

-10 0

1 1

1 2

-1 1

-1 -1

**Sample Output**

Case 1: 2